The Value of OTE in Homeland Security

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Transportation Security Administration

Outline

Security Technologies Mission

DHS Life Cycle Model

Operational Integration – Mission - Responsibilities

Operational Test & Evaluation (OT&E) Program

OT&E Activities

National Safe Skies Alliance

DHS OT&E Transformation

Recognition of the OT&E Craft

New Conflict Paradigm

Traditional Conflict
Peace
Crisis
War
Post War
Stability
Peace

Terrorism
Peace
Episodic
Terrorist Event
Instability
Change

War Fighters
Expensive
Complex
Exposed
Deliberate

Terror Fighters
Cheap
Simple
Hidden
Random

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Office of Security Technologies (CTO) Mission

The Office of Security Technologies develops and implements the best security technology solutions to protect the nation's transportation systems and ensure freedom of movement for people and commerce.

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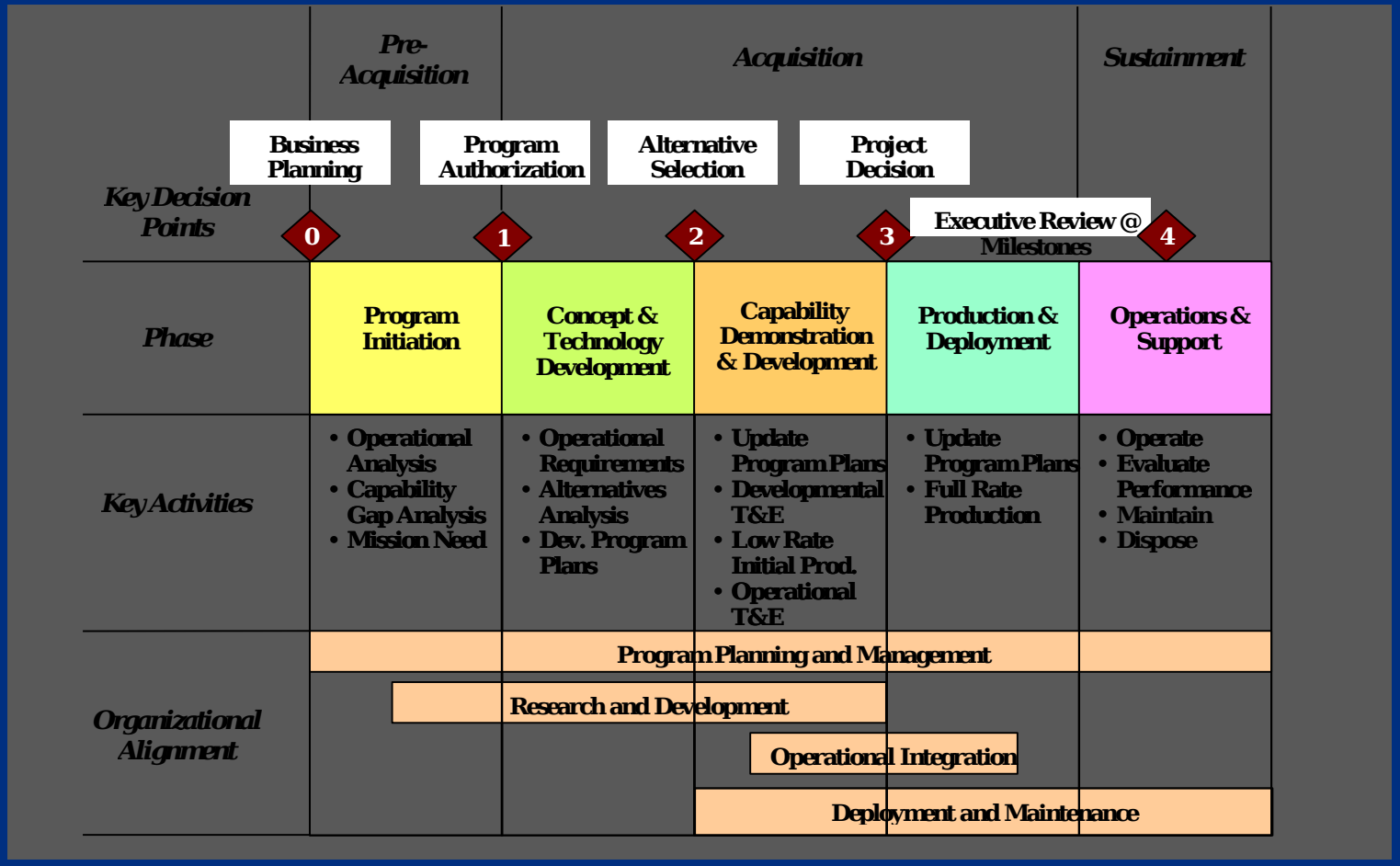
CTO Life-Cycle Model



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Operational Integration Division

Mission: "The Operational Integration Division evaluates the impact of new security technologies, procedures, and policies and then analyzes integration into existing systems to ensure operational effectiveness and suitability before full system production and deployment. The purpose of this work is to test, evaluate, and analyze pre-production or production representative systems under realistic conditions, including operation by those that will employ the equipment in the field in a variety of environmental conditions."

TSA MD 2600.1 (March 2003)

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Operational Integration Division

Responsibilities

- Plan, coordinate, and execute field demonstrations and operational test and evaluation efforts to determine the effectiveness and suitability under realistic operational conditions for products either at the end of R&D cycle or off-the-shelf products to be utilized in new security applications.
- Serve as lead for developing a CTO transition plan to operationally test and evaluate products that have completed the R&D process (DT&E completed) as well as off-the-shelf products.
- Ensure all information regarding operational use/user needs are identified and documented in a manner that can be communicated to the field.
- Manage and coordinate National Safe Skies Alliance (NSSA) activities for CTO.

Operational Test & Evaluation Program General Overview

Test Planning / Reviews
- Test objectives, measures of performance (MOPs), schedules, coordination, stop criteria, site/equipment selection, test protocols, documentation, training

Test Conduct
- Equipment installation, baseline configuration checks, data collection, test monitoring

Data Analysis
- Organization, reduction, analysis, and interpretation of data

Reporting
- Quick look/final results documentation, CTO recommendations

Program Measures of Performance (MOPs)

Operational Effectiveness

…the degree to which a product accomplishes its mission when used by representative personnel in the expected operational environment…

Operational Suitability

…the degree to which a product intended for field use satisfies its RMA, compatibility, transportability, interoperability, safety, human factors, documentation, TSA maintenance handbook and certification criteria, personnel, and training requirements…..

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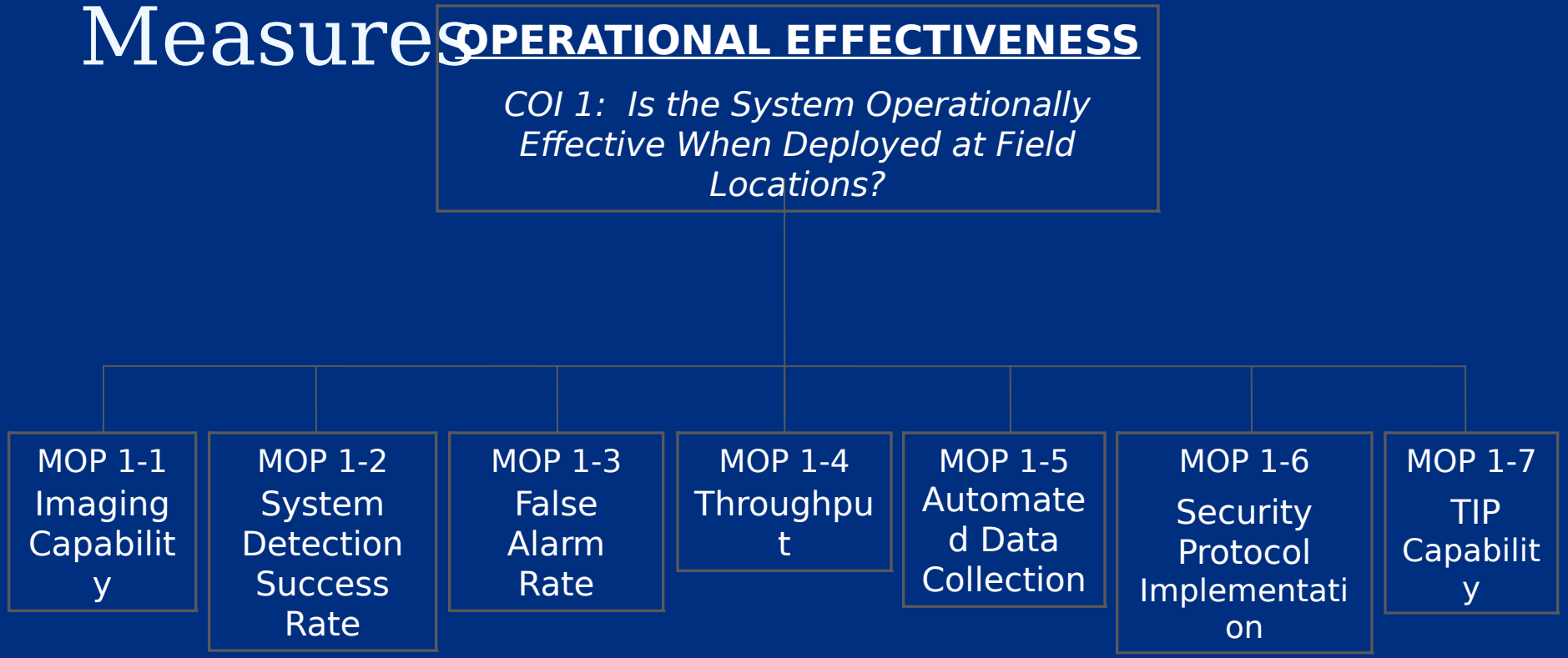
Example: Operational Effectiveness Test Measures


OPERATIONAL EFFECTIVENESS
COI 1: Is the System Operationally Effective When Deployed at Field Locations?
MOP 1-1 Imaging Capability
MOP 1-2 System Detection Success Rate
MOP 1-3 False Alarm Rate
MOP 1-4 Throughput
MOP 1-5 Automated Data Collection
MOP 1-6 Security Protocol Implementation
MOP 1-7 TIP Capability

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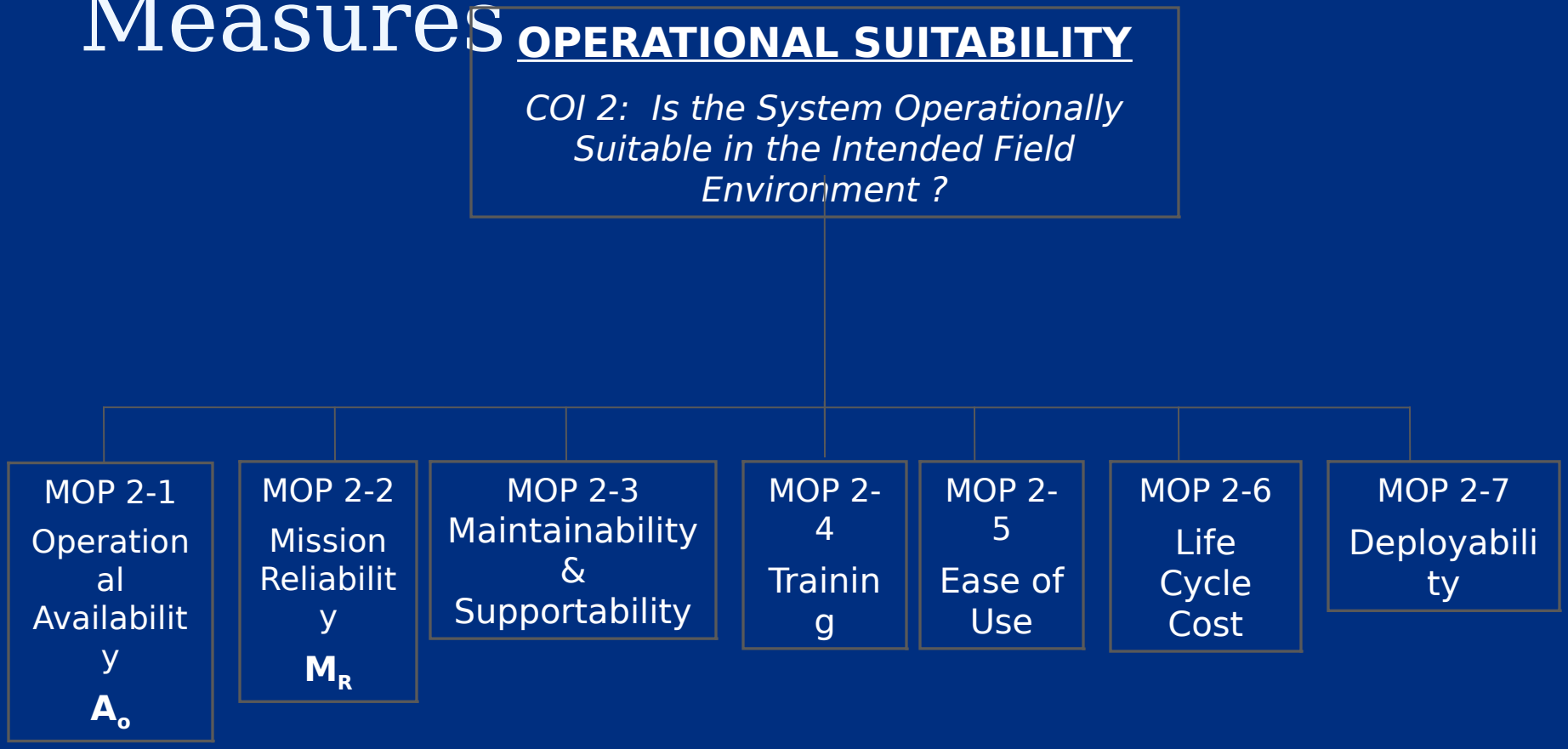
Example: Operational Suitability Test Measures


OPERATIONAL SUITABILITY
COI 2: Is the System Operationally Suitable in the Intended Field Environment ?
MOP 2-1 Operational Availability A_o
MOP 2-2 Mission Reliability M_R
MOP 2-3 Maintainability & Supportability
MOP 2-4 Training
MOP 2-5 Ease of Use
MOP 2-6 Life Cycle Cost
MOP 2-7 Deployability

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DHS - OT&E Activities

Checkpoint:

- Checkpoint ETD Working Group
  - ➔ Liquid Explosives QC Aid: 60-day 4-airport pilot to evaluate test protocol, gauge operational impact, and monitor ETD performance.
    - Start dates/sites: ORF (2/04), ORD (3/04), LAS (5/04), MCO (6/04)
  - ➔ Additional Channel Operational Test (evaluating additional ETD channel capability) at three airports. Timing TBD.

- CTO Checkpoint Task Force
  - Established user working group to facilitate pilot support from other TSA elements:
  - Collaboration within DHS Divisions to conduct pilots and field evaluations.

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DHS - OT&E Activities

Checkpoint: (cont.)

- Checkpoint Task Force Operational and pilot testing of several prototype technologies scheduled thru end of FY04.
  - Whole Body Trace Portal: Scheduled 2QFYO4 – 3QFY04, Location: TBD
  - Shoe Screening Technologies: Scheduled 3QFY04 – 4QFY04, Location: TBD
  - Casts and Prostheses Screening Technologies: Scheduled 4QFY04, Location: Vanderbilt University Hospital, TYS
  - Bottle Screening Technologies: Scheduled 3QFY04 – 4QFYO4, Location: TYS (proposed)
  - Hands/Shoe Screening Technologies: Scheduled 3QFY04 – 4QFYO4, Location: pilot at TYS (proposed), OT at TBD Cat X or Cat 1
  - Automated Carry-On Bag Screening: Scheduled 3QFY04 – 4QFY04, Location: TBD
  - Manual Body Imaging Technologies: Scheduled 3QFY04 – 4QFY04, Location: TBD
  - TRX Service Life Extension: Scheduled 4QFY04, Location: TBD
  - TRX Multiplexing Technologies: Scheduled 4QFY04, Location: TBD

DHS - OT&E Activities

Ports and Infrastructure/Conveyance:

- Airport Access Control Pilot Program (AACPP)
  - Aviation and Transportation Security Act (PL 107-71) requirement for pilot programs in no fewer than 20 airports to test and evaluate new and emerging technology for providing access control and other security protections for closed or secure areas of the airports.

  ➔ Phase I: Multiple site surveys are being conducted to yield 10 sites for Phase I Implementation in FY04. Additional site surveys will be performed to obtain an additional 10 airports for Phase II Implementation in FY05:

  ➔ Completed: EWR, BOI, BOS, MSP, SAV, TPA, DEN, SLC, JFK, PVD

  ➔ Pending: MIA, RSW, SJC,HLN, MCO

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DHS – OT&E Activities

Checked Baggage:

- Denver Test Site: Denver International Airport(Module 3) has been configured as a test bed (Congressional mandate) for in-line checked baggage screening.

➔ Possible OT&E of a candidate checked baggage screening system late 4QFY04, Location: TBD.

Cargo:

➔ Congressionally mandated cargo pilot program scheduled to begin 2QFY04: _

- Pre Test: 3/04 planned for ORD, LAX, DFW and ATL.
- Pilot Test: 4/04 – 9/04 planned for ORD, LAX, DFW, ATL plus 1-2 more.
- Participating airlines: United, Delta, American

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DHS - OT&E Activities

Unmanned Air Vehicles (UAV):

- Coast Guard
- Border Patrol
- Pipeline Surveillance
- Area Monitor

Federal Air Marshal Service (FAMS)

Computer Assisted Passenger Pre-Screening II (CAPPS II)

Network Central OTE Exercise

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DHS - OT&E Activities

National Safe Skies Alliance (NSSA)

- Funding provided by the Wendell H. Ford Aviation Investment and Reform Act for the 21st Century (P.L. 106-181). Part of the 1999 FAA reauthorization act, 49 U.S.C. 47137.
- Provides testing and evaluation of airport security systems and technology in an operational, test bed environment.
- Evaluates and tests the benefits of innovative aviation security systems or related technology, including explosives detection systems, for the purpose of improving aviation and aircraft physical security, access control, and passenger and baggage screening.

➔ NSSA Security Site Surveys (2-3wk):

- Completed: BOS (12/12/03), JAN (1/26)
- Pending: MCO (3/14), JFK (4/26), EWR (5/24), LGA (6/21), GPT (7/26), MSP (8/23), ELP (9/20)

➔ NSSA also supporting airport pilots in cargo and checkpoint areas

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Profile

- ***Not-for-Profit 501(c)3 Corporation***
- ***Founded in 1997***
- ***Industry Based Membership***
- ***Employees:***
  - Engineers
  - Statisticians
  - Security Analysts
  - Administrative
  - Management
- ***Facilities: DOD Secret***

Provide mission critical testing support to

U.S. Transportation Security Administration

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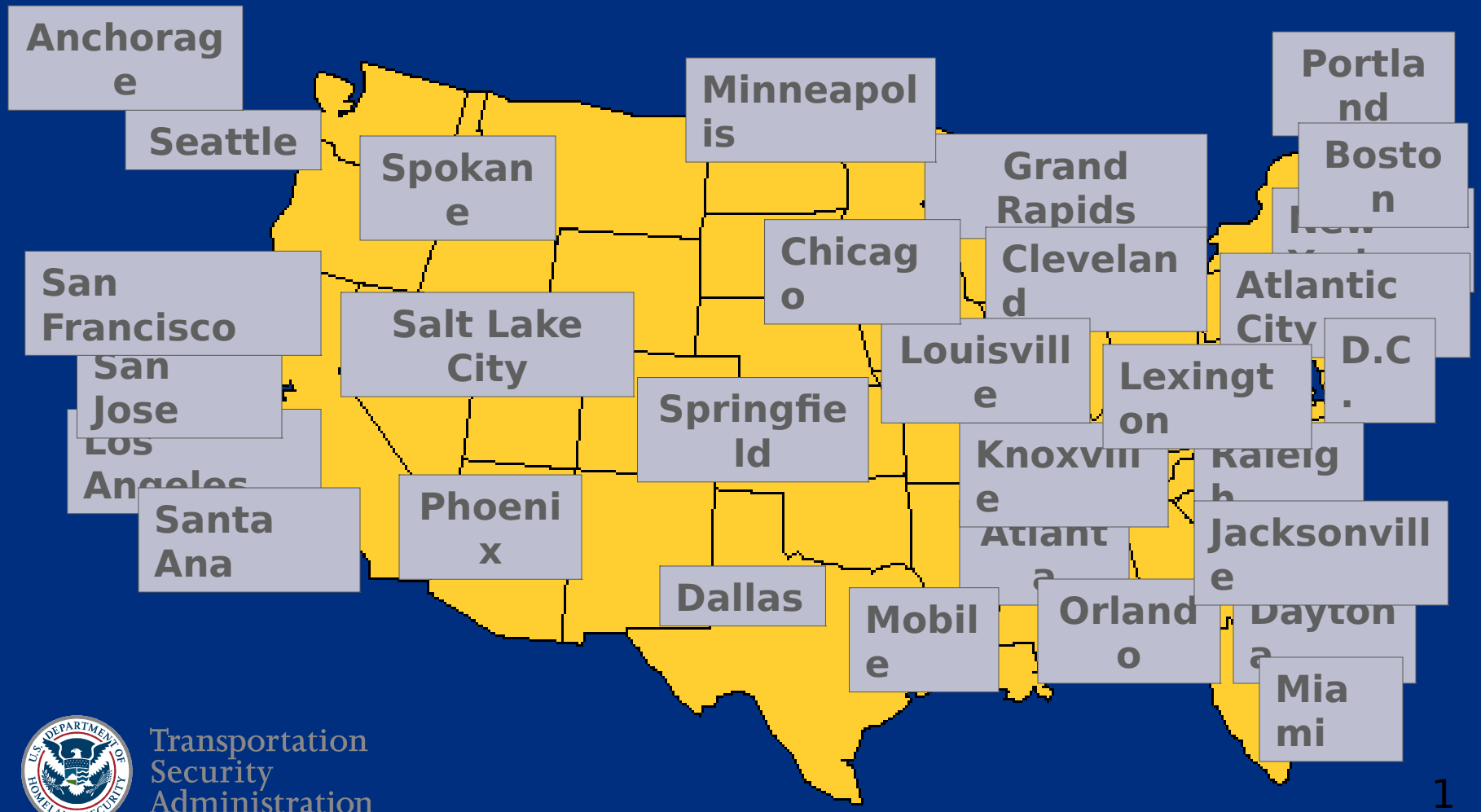
Test Sites to Date



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The Role of Operational Testing

- **"Real World" testing**
- **All testing applies a Systems Integration approach**
- **Continual Testing Leads to Continual Improvement**
- **Concurrent Projects at Multiple Airports**

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Security Testing & Evaluation

1) **Passenger Screening** of passengers & baggage

2) **Access Control** of authorized personnel to facilities and aircraft

3) **Checked Baggage, Cargo & Mail** screening

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Access Controls

Biometrics

CCTV & C⁴I

Personnel Portals

Smart Cards

Perimeter Protection

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Checked Baggage

System Design

System RMA

Imaging
Technologies

Human
Factors

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OT&E Lesson Learned

- Newly Certified Explosive Detection System (EDS)
- CY 2000 Deployment to Dallas Fort Worth Airport
- Reliability Availability Maintainability Issues
- 4 Month 17/7 OT&E – Result: Over 150 Improvements

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DHS OT&E Transformation

Air Transportation System (ATS) Concerns

Aerospace Commission Report

H.R. 2115 Sections 709 & 710

Next Generation ATS Joint Planning and Development Office:

Transform DTE, OTE, Certification and other test processes

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Transformed System Goals

- **Reduce aviation system costs by 25%**
- **Create 100’s of thousands of new jobs**
- **Provide three times current capacity**
- **Meet future air transportation demand**
- **Reduce curb-to-curb transit time 30%**
- **Limit time in airport to less than 30 minutes**
- **95% of arrivals & departures to be on-time**
- **Seamless air traffic and security operations**
- **Maintain aviation as safest mode of travel**
- **Retain role as aviation world leader**

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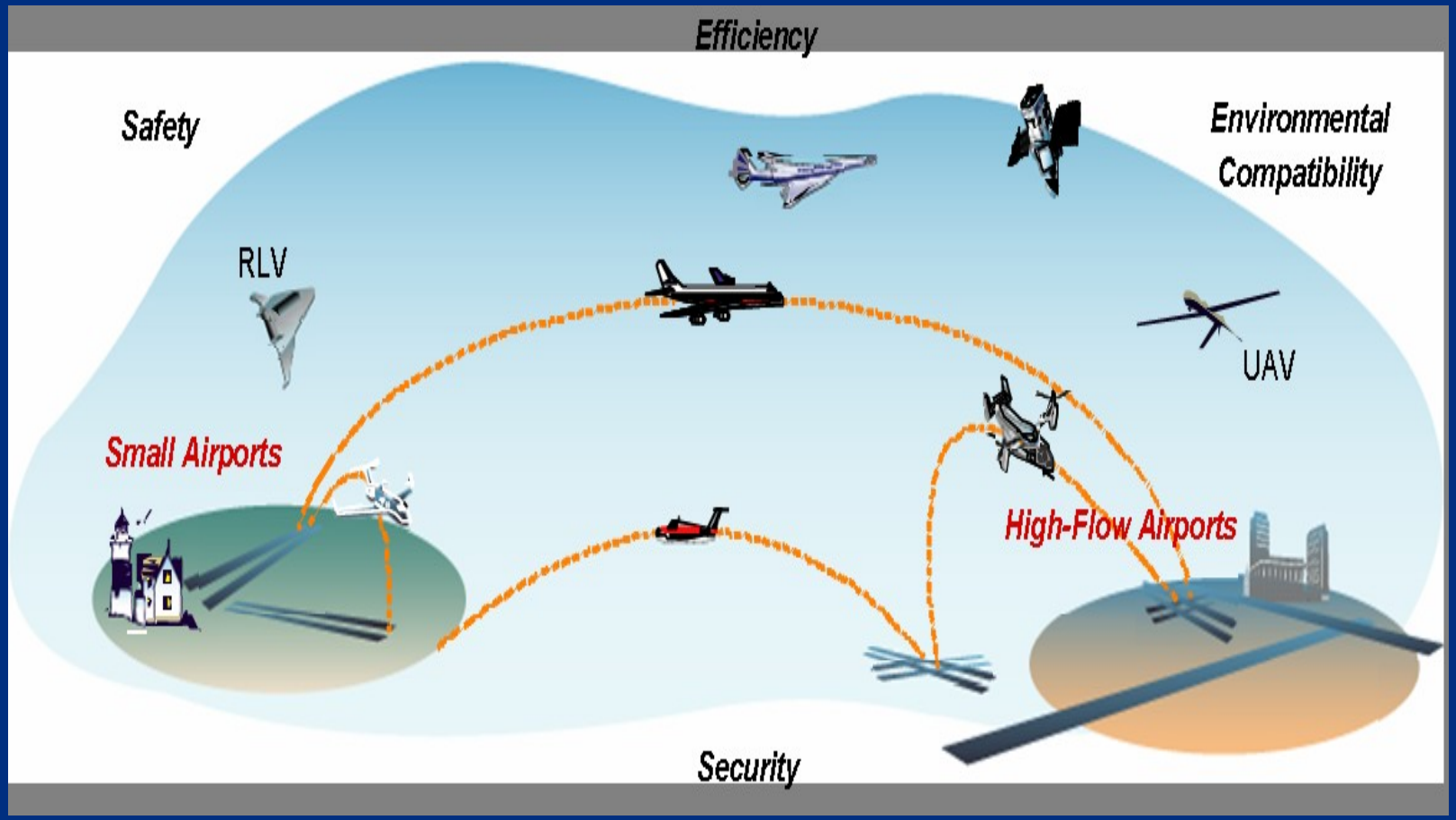
Scope



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T&E/OT&E Recognition

DoD = RDT&E

FAA = RE&D

DHS = S&T

Others = R&ED

Service to America Medals

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